

The diagram illustrates a vehicle powertrain system and its control architecture. The vehicle is shown moving to the left, as indicated by the "MOVEMENT DIRECTION" arrow. The powertrain components include an internal combustion engine (ENG, 1), a first motor/generator (MG1, 2), a planetary gear set (3), a second motor/generator (MG2, 10), and a battery (BATT, 14). The engine (1) is connected to the planetary gear set (3) via a shaft (13a). The planetary gear set (3) is connected to the first motor/generator (MG1, 2) and the second motor/generator (MG2, 10) via a shaft (11). The second motor/generator (MG2, 10) is connected to the battery (BATT, 14) via an inverter (INV, 15b). The battery (BATT, 14) is connected to the inverter (INV, 15a) via a line (15a). The inverter (INV, 15a) is connected to the planetary gear set (3) via a shaft (5). The planetary gear set (3) is connected to the wheels (7a, 7b) via a shaft (8a, 8b). The wheels (7a, 7b) are connected to the planetary gear set (3) via a shaft (6). The control system includes an ECM (31), M/C2 (33), and M/C1 (32) which are connected to the vehicle's communication bus (61). The HCM (21) is connected to the vehicle's communication bus (61) and receives input from a sensor (51). The HCM (21) outputs control signals (41, 42, 43, 44, 45, 46, 47) to the vehicle's components.

Fig. 1



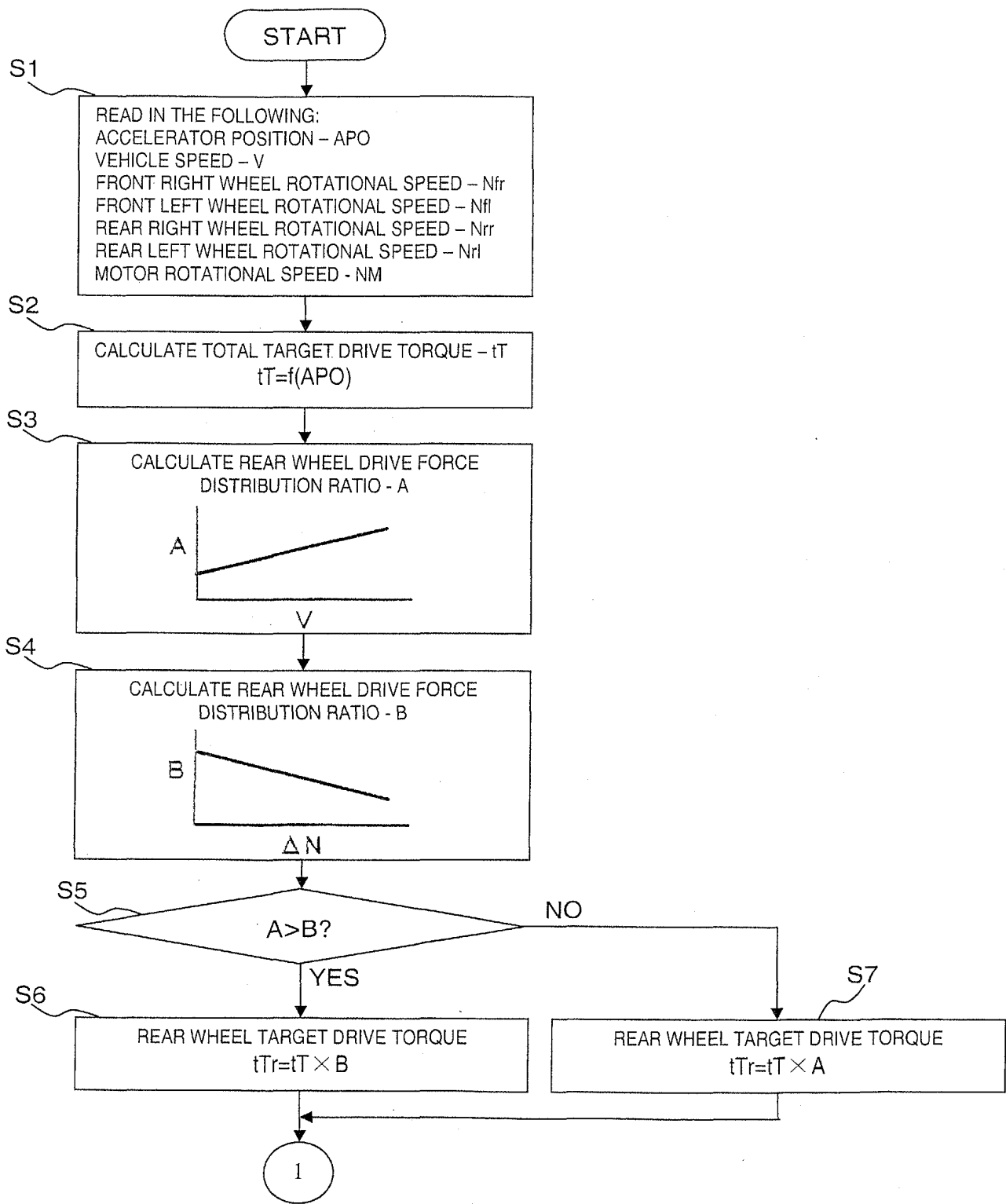


Fig. 3

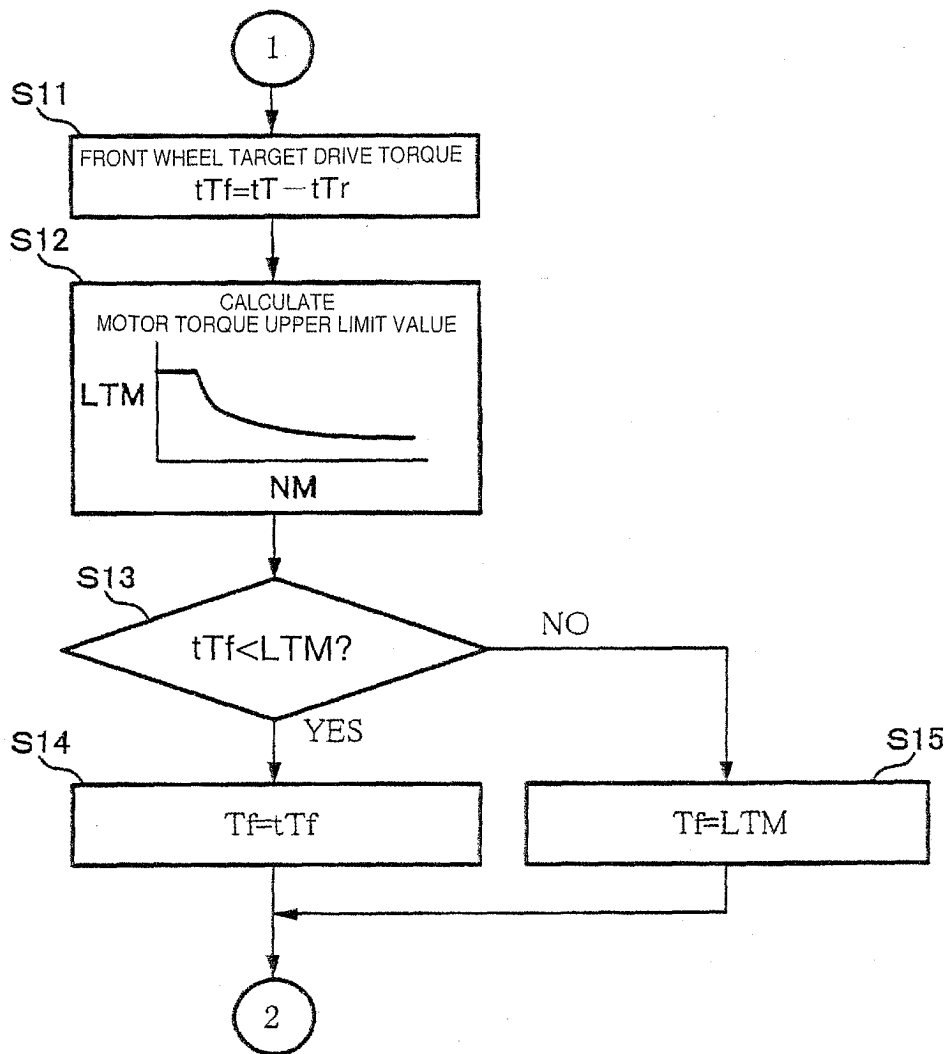


Fig. 4

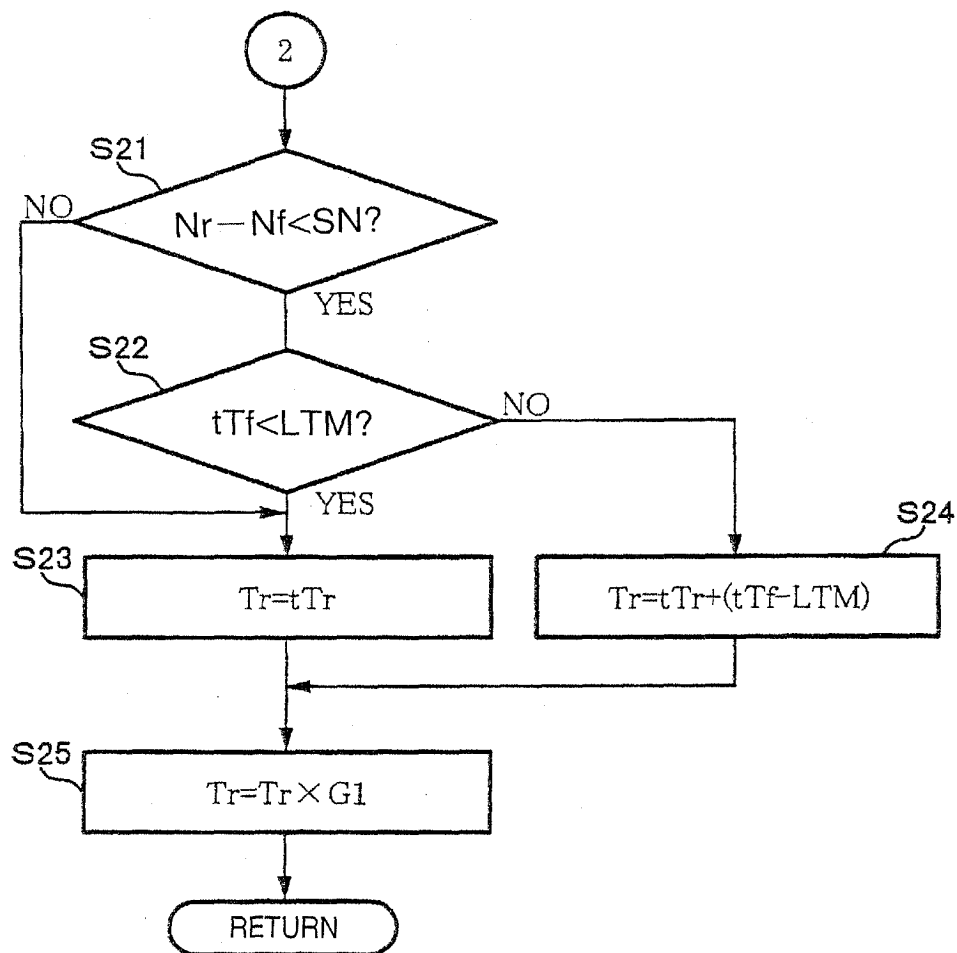


Fig. 5

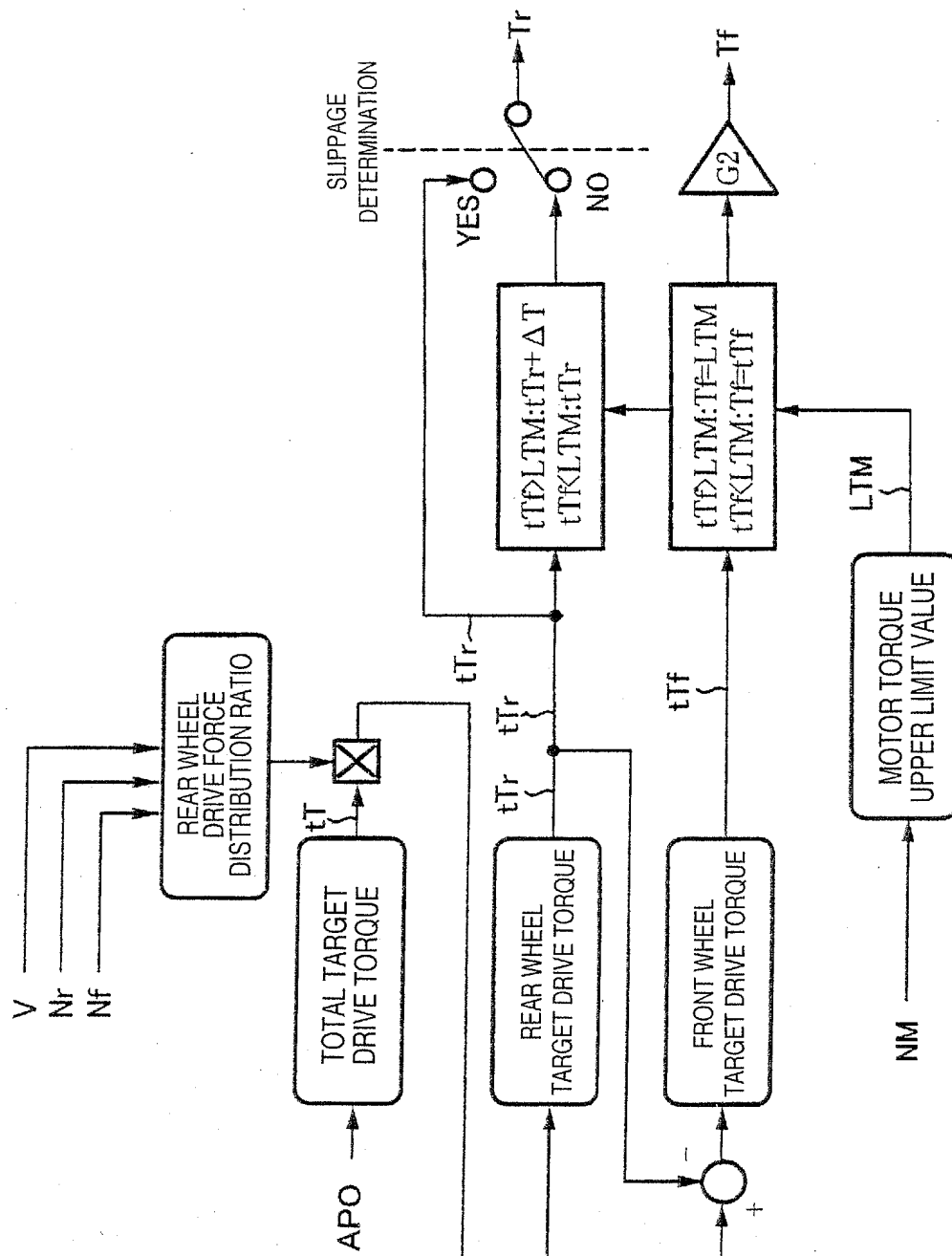


Fig. 6

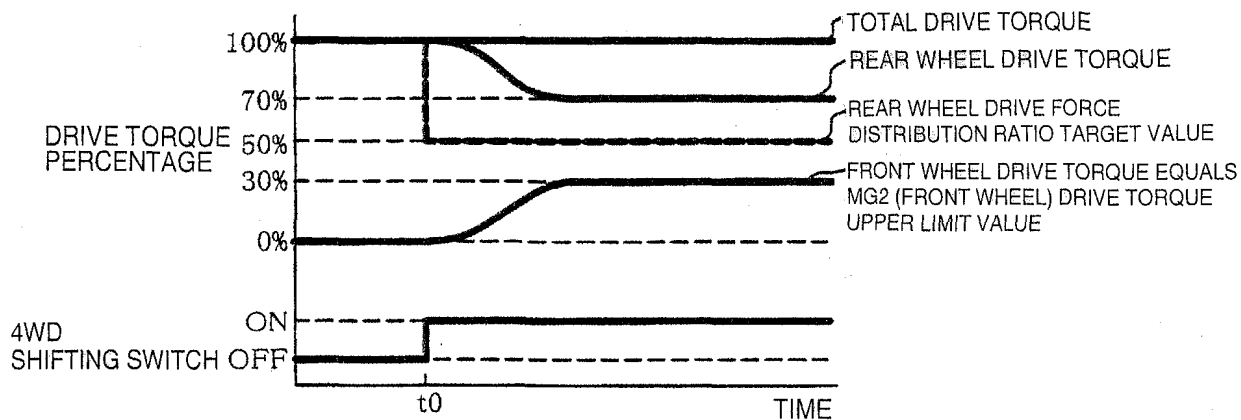


Fig. 7

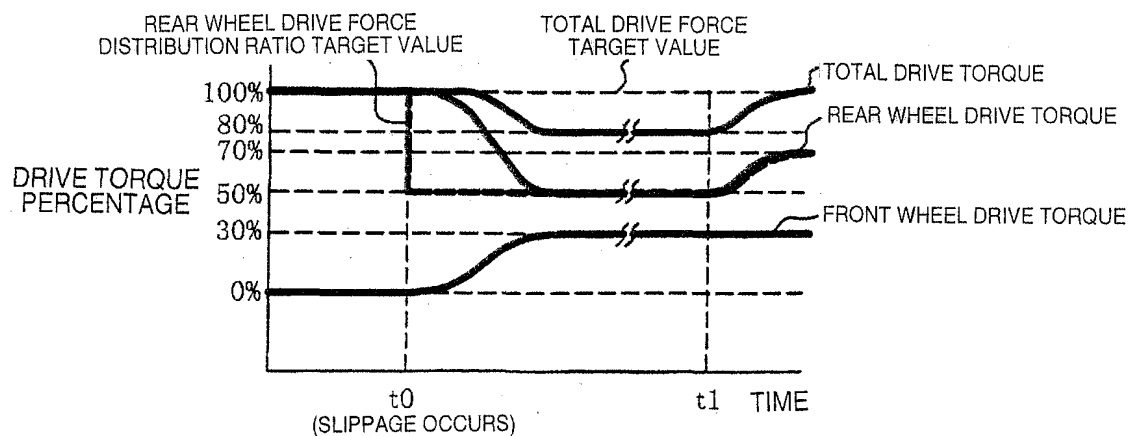


Fig. 8